

CENTRAL INTELLIGENCE AGENCY

INFORMATION REPORT

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1. On 31 October 1951, Prof. Dr. Heinrich Bertsch of the Hauptverwaltung Chemie, DDR Ministry for Heavy Industry, held a meeting attended by leading East German chemists. The subject under discussion was the support which universities and other research institutes could give the Hauptverwaltung Chemie in the current Five Year Plan. Among those present were

- a) Dr. (fnu) Panning, Central Office for Research and Technique, State Planning Commission.
- b) Dr. (fnu) Petersen, SAG Farbenfabrik, Wolfen.
- c) Dr. (fnu) Leibnitz, director, Institute for Chemical Technology, Leipzig University, and chief of VEB Plasta, Leipzig.
- d) Directors of chemical institutes of various East Zone universities.

At the meeting, the following statements on DDR chemical production were made:

2. Sulfuric Acid: If the planned production of SO_3 is to be reached, the DDR will have to increase its production capacity by 275,000 tons per year by 1955. Each year 95,000 tons of pyrites can be mined, which yields about 72,000 tons of sulfuric acid. From Bulgaria 200,000 tons of pyrites will be imported annually yielding about 150,000 tons of SO_3 . At the end of the Five Year Plan, the government hopes to be able to produce 500,000 tons annually. This would correspond to 170 to 180 per cent of the 1938 production in the area now included in the DDR. In order to meet the goal, the Ministry for Heavy Industry, in cooperation with the State Planning Commission, plans to develop new methods for the production of SO_3 from unexploited minerals in the DDR, particularly gypsum and magnesium. It will also be necessary to produce in the future sulfuric acid from Kieserite, a mixture composed mainly of $MgSO_4$ and $MgCl_2$. A pilot plant near Oranienburg is now producing 35 tons of SO_3 per month, using Kieserite. A contact installation which uses Kieserite according to the Kammerverfahren is being constructed in Minchritz.
3. Nitric Acid and Other Inorganic Chemicals:
- a) By 1955, production of HNO_3 is to be 500,000 tons annually.

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b) In 1953 a hydrogen peroxide plant will be constructed at an unspecified place in the DDR.*

c) Production of phosphorous has begun in Piesteritz and is to be increased.

4. Aluminum and Magnesium: Fifty thousand tons of aluminum and 150,000 tons of magnesium (for the alloying industry) are to be produced annually by 1955 in the DDR. Since it is considered impossible to import raw materials for aluminum production indefinitely, in the future alumina will be worked with chloric acid. But first alumina production must be increased and the production methods developed. Alumina production at the Lauta works is now 30,000 tons a year; this is to be increased to 50,000 tons in 1952.

5. Alkalious matter:

a) By 1955 NaOH production is to be increased to 400,000 tons annually.

b) Production of calcinized soda (anhydrous Na_2CO_3) is to be increased to 640,000 tons a year by 1955. In order to reach a capacity of 1,200 tons per year, the Ministry for Heavy Industry plans to rebuild the soda production installations of the Solway works in Bernburg, against the advice of Prof. Dr. Bertsch. Bertsch believes that soda production should be resumed on a large scale at the Leuna works, as a by-product of ammonia production, using the large quantities of CO_2 there. For unknown reasons, Bertsch's advice has not been heeded.

c) Sodium metal production has begun recently in Granienburg. A small quantity is also produced in Bitterfeld, but it causes complaints since it contains excessive amounts of potassium, is very dangerous, and has caused a number of accidents. In both plants, production is achieved electrolytically from NaOH.**

d) Barium salts, not now being produced, will be made by Gärungschemie (formerly Zuckerraffinerie), Dessau, in 1952.

6. Organic Chemicals: The Five Year Plan requires that lignite, the main base product for organic chemicals, be produced at an increasing rate.

a) The 1951 production of 7,000 tons of pure phenol is to be increased to 20,000 tons by 1955, mainly by improving methods of obtaining it from distillery waste water (Schwelerei). The synthesis of phenol from benzol is not considered possible, since benzol is even more scarce in the DDR than phenol.

b) By 1955, between 30,000 and 50,000 tons of benzol will be needed each year.

c) By 1955, 20,000 tons of toluene will be needed annually, mostly for the production of terylene fiber. VEB Plasta, Leipzig, has developed on laboratory scale a method of producing toluene from orthocresol and zinc, yielding a by-product of high-quality zinc oxide. The zinc necessary, however, for large scale production would have to be imported.

d) Considerable oil deposits have been discovered in the DDR. One is located near Langensalza, in the southern Harz mountains, where oil has been found under the potassium deposits. The yield is not known, although the deposits have been tapped. Discovery of the oil "makes it possible to consider the production of acetylene from methane in the future." A trial installation (Versuchsanlage) for this is working in Leuna; it is operating according to the Hüls method.***

e) The 2,000 to 3,000 tons of aniline needed in the DDR annually has to be imported. A number of SAC's and other works have promised to produce it, but have not done so as yet.

f) 1951 production of phthalic anhydride was 6,000 tons. An annual production of 10,000 tons is planned by 1955.

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g) Following are other requirements for production by 1955:

Malic acid, 6,000 tons annually
Adipic acid, 6,000 tons annually
Picolinic acid, 2,000 tons annually.

Since phenol supplies are insufficient, furfural chemistry on a pentose basis must be developed as a starting point in the production of the above dicarboxylic acids. 1951 production at Gärungschemie was 800 tons of furfural, made by wood hydrolysis. Furfural could be produced from Mecklenburg peat, but the yield of one per cent is not economically feasible. Until 1955, 2,000 tons of 100 per cent synthetic fiber (vollsynthetisch) are to be produced; these will mainly be perlon, nylon, terylene and orlon.

h) Glycerine can only be produced according to the Reppe synthesis of acetylene and formaldehyde.**** Preliminary research (Vorarbeiten) is carried out at the Buna works, Schkopau.

i) Improvement of production of fatty acids through paraffin oxidation and synthesis of fatty acids from polyenes are two other problems of chemical research in the DDR Five Year Plan.

* Comment: H₂O₂ is already being produced at the former IG 50X1-HUM works in Eilenburg. It is about a 30% concentration, and, therefore, not usable as an oxygen carrier for rockets.

** Comment:

Small quantities of calcium metal have been supplied to chemical institutes and laboratories by Bitterfeld without interruption, but it is not known whether these come from old supplies or new production.

*** Comment: Some of the acetylene produced at Leuna goes to 50X1-HUM the Buna works in Schkopau, where butadiene is produced by the Reppe method, from acetylene on a pilot plant scale.

**** Comment: $\text{CH} \equiv \text{CH} \xrightarrow{\text{H}_2\text{O}} \text{HC} \equiv \text{C}-\text{CH}_2\text{OH}$ (Propargyl alcohol) $\xrightarrow{\text{H}_2} \text{H}_2\text{C} = \text{CH} - \text{CH}_2\text{OH}$ (Allyl alcohol) $\xrightarrow{\text{H}_2\text{OCl}} \text{HOCH}_2 - \underset{\text{Cl}}{\text{CH}} - \text{CH}_2 - \text{OH} \xrightarrow{\text{H}_2\text{O}} \text{HOCH}_2 - \text{CHOH} - \text{CH}_2\text{OH}$

(Glycerine). Successful conclusion of the Schkopau research would be extremely important, because the DDR cannot afford to produce glycerine from fats which are vitally needed in the food industry.

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